
UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2005

SAMPLE COSTS TO PRODUCE
SUMMER SQUASH



SAN JOAQUIN VALLEY - South

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INTRODUCTION

Sample costs to produce summer squash in the southern San Joaquin Valley are shown in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. The practices described are based on production operations considered typical for this crop and region, but will not apply to every farm. Sample costs for labor, materials, equipment and custom services are based on current figures. “Your Costs” columns in Tables 1 and 2 are provided for entering your farm costs.

The hypothetical farm operations, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of the calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, (530) 752-3589 or the local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities can be downloaded at <http://coststudies.ucdavis.edu>, requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-4424 or obtained from the local county UC Cooperative Extension offices. Some archived studies are also available on the website.

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ASSUMPTIONS

The assumptions refer to Tables 1 to 7 and pertain to sample costs to produce summer squash in the southern San Joaquin Valley. The cultural practices described represent production operations and materials considered typical for a farm in the region. Costs, materials, and practices in this study will not apply to all farms. Timing of and types of cultural practices will vary among growers within the region and from season to season due to variables such as weather, soil, and insect and disease pressure. The study is intended as a guide only. **The use of trade names and cultural practices in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products or cultural practices.**

Farm. This report is based on a 60 contiguous acre farm. The land is rented and farmed by the grower. In this study 20 acres are planted to summer squash and the remaining acres to other vegetables.

Production Operating Costs

Land Preparation. The grower rips the land one time, discs two times, rolls the ground and lists the beds in February. In a single operation after listing, the beds are shaped, and the plastic mulch and drip tape laid. Besides the tractor driver, two people follow the shaper to handle the plastic and drip tape.

Plant. Planting costs include the seed (2 lbs) for the transplants and the charges for growing the transplant seedlings. The seedlings are transplanted in the field in March. Common varieties planted are Noche and Green Eclipse zucchini squash, and Superset and Multipik yellowneck squash. The grower transplants on six 60-inch beds, leaving every seventh and eighth bed unplanted, 4,915 plants per acre at a 16-inch in-row spacing. Holes for the plants are punched in the plastic by a mechanical punch machine. Ten people (50 man hours) plant one acre in five-hours. A second (August) squash planting with seeds or transplants may be made into the same plastic with holes punched between the previous holes.

Irrigation. Irrigation includes the water costs per irrigation and irrigation labor. The drip line is buried approximately 2-inches deep in the center of the bed at bed shaping. Drip-lines are typically 300 to 400 feet long and connected to the reusable lay flat main lines located at the edge of the field. Irrigation begins in late March after planting and the field is irrigated twice a week through June and three times per week in July. The crop uses approximately 30 acre-inches per season. The irrigation water cost \$4.83 per acre-inch, based on grower summer pumping costs. Irrigation labor is calculated as 0.15 hours per acre per irrigation.

Fertilization. Beginning in early April and continuing through June, Nitrogen (N) as UN32 at 35.2 pounds per acre (10 gallons of material) is applied every 10 days through the drip line.

Pollination. Honeybees are used for pollination. Normally two hives per acre are placed around the edges of the field. Hives should be in place for the first bloom – usually about one month after planting.

Pest Management. If insects or diseases appear, contract your local farm advisor or pest control adviser. For information on pesticide use permits, contact the local county agricultural commissioner's office. Adjuvants are recommended for many pesticides for effective control, but are not included in this study. Pesticide costs vary by location and grower volume. Pesticides costs in this study are taken from a single dealer and shown as full retail.

Weeds. Black plastic mulch is laid on the bed prior to planting, in addition to conserving moisture and warming the soil, it controls weeds. Metam sodium (Vapam) is injected into the drip lines for weed and disease management prior to planting.

Insects. Admire insecticide is applied through the drip line shortly after planting (early April) for aphid and whitefly control. The field is sprayed with Thiodan or Capture insecticide in June for aphid control. Pest control is minimal during spring plantings. Squash crops planted in August for fall harvest usually require several insecticide applications for worms, aphids, and whiteflies. In addition to overhead sprays, usually one to two applications of Admire for whiteflies and/or aphids is applied through the drip line.

Diseases. Viruses can be devastating to summer planted squash. Most viruses are transmitted by aphids thus aphid control is paramount. The treatments with Admire help lessen the virus damage, and some growers will use a reflective (shiny) mulch over the beds to lessen the chance the aphids will find the crop. Metam sodium injected through the drip lines prior to planting is used to reduce affects from soil borne diseases such as Phytophthora root rot.

Cleanup. After harvest the plants are mowed, the plastic mulch, and drip tape removed and discarded by hauling to the landfill. Landfill fees are based on the weight of the discarded material.

Pickup. Costs for a 1/2-ton pickup are included in the study. The pickup is used by the grower to inspect the fields and for general ranch business. The calculations in the study do not represent results from any collected data.

Harvest. The crop is harvested an average of every 18 to 24 hours (almost every single day, especially if going for the “fancy” grade) from mid-May to mid-July. The crop is hand harvested on alternate days in this study and packed in the field. A self propelled packer (12 rows wide) travels down the unplanted beds. The harvest crew consists of the driver for the packer unit, 12 cutters that pick the plants and 4 packers on the packing unit. In addition a forklift and truck both with operators load and transport the boxes to the grower’s storage. It is assumed the forklift and truck drivers work the same hours as the picking crew.

Yields. The summer squash are picked small (zucchini 5-6 inches long, crookneck 1.25 – 2 inch diameter) and packed in 28-pound boxes. The crop yields an average of 1,200 boxes per acre.

Returns. The overall grower returns are estimated at \$7.00 per box. The price is based on the May to July 2004 USDA wholesale prices. It is assumed that the return to the grower is 70% of the USDA wholesale price, which is used in this study, but may actually be lower. The yields and returns are used in the Range Analysis Table to show a range of returns over various yields.

Labor. Labor rates of \$12.42 per hour for machine operators and \$9.32 for general labor includes payroll overhead of 38%. The basic hourly wages are \$9.00 for machine operators and \$6.75 for general labor. The overhead includes the employers’ share of federal and California state payroll taxes, workers' compensation insurance for truck crops (code 0172), and a percentage for other possible benefits. Workers’ compensation costs will vary among growers, but for this study the cost is based upon the average industry final rate as of January 1, 2005 (California Department of Insurance). Labor for operations involving machinery are 20% higher than the operation time given in Table 1 to account for the extra labor involved in equipment set up, moving, maintenance, work breaks, and field repair.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by American Society of Agricultural Engineers (ASAE). Fuel and lubrication costs are also determined by ASAE equations based on maximum power takeoff (PTO) horsepower, and fuel type. Prices for on-farm delivery of diesel and gasoline are \$1.51 and \$2.05 per gallon, respectively. The cost includes a 2% local sales tax on diesel fuel and 8% sales tax on gasoline. Gasoline also includes federal and state excise tax, which are refundable for on-farm use when filing your income tax. The fuel, lube, and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost in Table 6 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

Interest on Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 7.65% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge.

Risk. Production risks should not be minimized. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks, which affect the profitability and economic viability.

Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm and not to a particular operation. These costs include property taxes, interest on operating capital, office expense, liability and property insurance, and investment repairs.

Property Taxes. Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.690% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs \$529 for the entire farm.

Office Expense. Office and business expenses are estimated at \$30 per acre. These expenses include office supplies, telephones, bookkeeping, accounting, and legal fees. The cost is a general estimate and not based on any actual data.

Land Rent. The 60 acres are rented for cash at \$300 per acre. The rented land includes the irrigation system that is maintained by the landlord. Land rents range from \$250 to \$350 per acre.

Investment Repairs. Annual maintenance is calculated as two percent of the purchase price.

Non-Cash Overhead

Non-cash overhead is calculated as the capital recovery cost for equipment and other farm investments.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is $((\text{Purchase Price} - \text{Salvage Value}) \times \text{Capital Recovery Factor}) + (\text{Salvage Value} \times \text{Interest Rate})$.

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements) the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in this operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in the tables.

Capital Recovery Factor. Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

Interest Rate. The interest rate of 6.01% used to calculate capital recovery cost is the USDA-ERSs ten-year average of California's agricultural sector long-run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector.

Tools. This includes shop tools, hand tools, and miscellaneous field tools. The tools are an estimated value and not taken from any specific data.

Irrigation/Laterals. The grower purchases drip tape for the beds annually and owns the lateral or main lines (vinyl flat pipe) that connect to the drip tape. The rows are assumed to be 400 feet long and require 2,178 feet of lateral lines for the 20 acres.

Equipment. Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in the Whole Farm Annual Equipment, Investment, and Business Overhead Costs table. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

Table Values. Due to rounding, the totals may be slightly different from the sum of the components.

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UC COOPERATIVE EXTENSION
Table 1. COST PER ACRE TO PRODUCE SUMMER SQUASH
 SAN JOAQUIN VALLEY 2005

Operation	Operation Machine (Hrs/A)	Time Labor	Cash and Labor Costs per Acre				Total Cost	Your Cost
			Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent		
Cultural:								
Land Prep: Rip	0.32		5	8	0	0	13	
Land Prep: Disc 2X	0.28		4	7	0	0	11	
Land Prep: Roll (Cultipacker)	0.08		1	1	0	0	2	
Land Prep: List Beds	0.20		3	2	0	0	5	
Land Prep: Bed Shape+Mulch+Drip	6.00	12.00	201	57	223	0	481	
Connect drip to main line	0.00	3.00	28	1	0	0	29	
Fumigate: Drip System (Vapam)	0.00	0.30	3	0	158	0	160	
Plant: Make Planting Holes	0.32		5	1	0	0	6	
Plant: Transplant.	0.00	50.00	466	0	198	0	664	
Irrigate	0.00	5.55	52	0	145	0	197	
Insect: Aphid, Whitefly (Admire) through dripline	0.00	0.10	1	0	132	0	133	
Fertilize: N (UN32) drip	0.00		0	0	129	0	129	
Pollinate: Bee Hives (2)	0.00		0	0	0	100	100	
Insect: Aphid (Capture)	0.18		3	2	22	0	26	
Field Cleanup: Mow Plants	0.17		3	2	0	0	5	
Field Cleanup: Roll Mulch/Tape/Haul to Dump	0.10	4.00	39	1	0	3	42	
Miscellaneous Pickup Use	2.50		37	30	0	0	67	
TOTAL CULTURAL COSTS	10.15	74.95	850	111	1,006	103	2,068	
Harvest:								
Harvest: Field Pick and Pack	18.00	288.00	2,952	297	1,200	0	4,449	
Load and Haul	36.00		537	277	0	0	813	
TOTAL HARVEST COSTS	54.00	288.00	3,489	573	1,200	0	5,262	
<u>Interest on operating capital</u>							133	
TOTAL OPERATING COSTS/ACRE			4,339	685	2,206	103	7,465	
CASH OVERHEAD:								
Liability Insurance							9	
Office Expense							30	
Land Rent							300	
Property Taxes							16	
Property Insurance							11	
Investment Repairs							3	
TOTAL CASH OVERHEAD COSTS							368	
TOTAL CASH COSTS/ACRE							7,833	
Non-Cash Overhead (Capital Recovery)								
			Per Producing Acre		Annual Cost Capital Recovery			
Irrigation Laterals			27		10		10	
Miscellaneous Field/Shop Tools			100		24		24	
Equipment			2,443		270		270	
TOTAL NON-CASH OVERHEAD COSTS			2,569		304		304	
TOTAL COSTS/ACRE							8,137	

UC COOPERATIVE EXTENSION
Table 2. COST PER ACRE TO PRODUCE SUMMER SQUASH
 SAN JOAQUIN VALLEY - 2005

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Summer Squash	1,200.00	box	7.00	8,400	
OPERATING COSTS					
Irrigation:					
Drip Tape 5mil	7,920.00	foot	0.01	95	
Water Pumped	30.00	acin	4.83	145	
Crop Protect:					
Plastic Black 5'x4000'/ft (mulch)	8,000.00	foot	0.02	128	
Fumigant:					
Vapam	45.00	acre	3.50	158	
Seed:					
Seed - Summer Squash	2.00	lb	30.00	60	
Transplants - Summer Squash	4,915.00	each	0.03	138	
Fertilizer:					
UN32 (32-0-0)	316.80	lb N	0.41	129	
Insecticide:					
Capture 2EC-Cal	4.50	floz	4.78	22	
Admire 2F	20.00	floz	6.62	132	
Custom:					
Bee Hives	2.00	each	50.00	100	
Discard Plastic (Dump Fees)	125.00	lb	0.02	3	
Carton:					
Boxes 28 lb	1,200.00	each	1.00	1,200	
Labor (machine)	76.98	hrs	12.42	956	
Labor (non-machine)	362.95	hrs	9.32	3,383	
Fuel - Gas	10.41	gal	2.05	21	
Fuel - Diesel	259.85	gal	1.51	392	
Lube				62	
Machinery repair				208	
Interest on operating capital @ 7.65%				133	
TOTAL OPERATING COSTS/ACRE				7,464	
NET RETURNS ABOVE OPERATING COSTS				936	
CASH OVERHEAD COSTS:					
Liability Insurance				9	
Office Expense				30	
Land Rent				300	
Property Taxes				16	
Property Insurance				11	
Investment Repairs				3	
TOTAL CASH OVERHEAD COSTS/ACRE				368	
TOTAL CASH COSTS/ACRE				7,833	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Irrigation Laterals				10	
Miscellaneous Field/Shop Tools				24	
Equipment				270	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				304	
TOTAL COSTS/ACRE				8,137	
NET RETURNS ABOVE TOTAL COSTS				263	

UC COOPERATIVE EXTENSION
Table 3. COST PER ACRE TO PRODUCE SUMMER SQUASH
 SAN JOAQUIN VALLEY - 2005

Beginning JAN 05	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
Ending DEC 05	05	05	05	05	05	05	05	05	05	05	05	05	
Cultural:													
Land Prep: Rip		13											13
Land Prep: Disc 2X		11											11
Land Prep: Roll (Cultipacker)		2											2
Land Prep: List Beds		5											5
Land Prep: Bed Shape+Mulch+Drip		481											481
Connect drip to main line		28											28
Fumigate: Drip System (Vapam)		160											160
Plant: Make Planting Holes			6										6
Plant: Transplant.			664										664
Irrigate			23	44	49	49	33						197
Insect: Aphid, Whitefly (Admire) through dripline				133									133
Fertilize: N (UN32) drip				43	43	43							129
Pollinate: Bee Hives (2)				100									100
Insect: Aphid (Capture)						26							26
Field Cleanup: Mow Plants							5						5
Field Cleanup: Roll Mulch/Tape/Haul to Dump							42						42
Miscellaneous Pickup Use	10	10	10	10	10	10	10						67
TOTAL CULTURAL COSTS	10	710	702	329	101	127	89	0	0	0	0	0	2,068
Harvest:													
Harvest: Field Pick and Pack					1,246	2,448	756						4,449
Load and Haul					226	452	136						813
TOTAL HARVEST COSTS	0	0	0	0	1,471	2,900	891	0	0	0	0	0	5,262
Interest on operating capital @ 7.65%	0	5	9	11	21	40	47	0	0	0	0	0	133
TOTAL OPERATING COSTS/ACRE	10	714	711	340	1,594	3,068	1,027	0	0	0	0	0	7,464
OVERHEAD:													
Liability Insurance			9										9
Office Expense	4	4	4	4	4	4	4						30
Land Rent										300			300
Property Taxes				8								8	16
Property Insurance				6								6	11
Investment Repairs	0	0	0	0	0	0	0	0	0	0	0	0	3
TOTAL CASH OVERHEAD COSTS	5	5	13	18	5	5	5	0	0	300	0	14	368
TOTAL CASH COSTS/ACRE	14	719	725	359	1,598	3,072	1,031	0	0	300	0	14	7,832

UC COOPERATIVE EXTENSION
Table 4. RANGING ANALYSIS
 SAN JOAQUIN VALLEY - 2005

COSTS PER ACRE AT VARYING YIELD TO PRODUCE SUMMER SQUASH

	YIELD (28 lb boxes/acre)						
	800	900	1,000	1,100	1,200	1,300	1,400
OPERATING COSTS/ACRE:							
Cultural Cost	2,068	2,068	2,068	2,068	2,068	2,068	2,068
Harvest Cost (Pick & Haul)	3,508	3,947	4,385	4,824	5,262	5,701	6,139
Interest on operating capital	110	116	121	127	133	139	145
<i>TOTAL OPERATING COSTS/ACRE</i>	5,686	6,131	6,574	7,019	7,463	7,908	8,352
<i>TOTAL OPERATING COSTS/box</i>	7.11	6.81	6.57	6.38	6.22	6.08	5.97
CASH OVERHEAD COSTS/ACRE							
<i>TOTAL CASH COSTS/ACRE</i>	6,049	6,496	6,940	7,386	7,831	8,278	8,723
<i>TOTAL CASH COSTS/box</i>	7.56	7.22	6.94	6.71	6.53	6.37	6.23
NON-CASH OVERHEAD COSTS/ACRE							
<i>TOTAL COSTS/ACRE</i>	6,301	6,762	7,219	7,678	8,135	8,594	9,050
<i>TOTAL COSTS/box</i>	7.88	7.51	7.22	6.98	6.78	6.61	6.46

NET RETURNS PER ACRE ABOVE OPERATING COSTS

PRICE \$/box	YIELD (28 lb boxes/acre)						
	800	900	1,000	1,100	1,200	1,300	1,400
6.00	-886	-731	-574	-419	-263	-108	48
6.50	-486	-281	-74	131	337	542	748
7.00	-86	169	426	681	937	1,192	1,448
7.50	314	619	926	1,231	1,537	1,842	2,148
8.00	714	1,069	1,426	1,781	2,137	2,492	2,848
8.50	1,114	1,519	1,926	2,331	2,737	3,142	3,548
9.00	1,514	1,969	2,426	2,881	3,337	3,792	4,248

NET RETURNS PER ACRE ABOVE CASH COSTS

PRICE \$/box	YIELD (28 lb boxes/acre)						
	800	900	1,000	1,100	1,200	1,300	1,400
6.00	-1,249	-1,096	-940	-786	-631	-478	-323
6.50	-849	-646	-440	-236	-31	172	377
7.00	-449	-196	60	314	569	822	1,077
7.50	-49	254	560	864	1,169	1,472	1,777
8.00	351	704	1,060	1,414	1,769	2,122	2,477
8.50	751	1,154	1,560	1,964	2,369	2,772	3,177
9.00	1,151	1,604	2,060	2,514	2,969	3,422	3,877

NET RETURNS PER ACRE ABOVE TOTAL COSTS

PRICE \$/box	YIELD (28 lb boxes/acre)						
	800	900	1,000	1,100	1,200	1,300	1,400
6.00	-1,501	-1,362	-1,219	-1,078	-935	-794	-650
6.50	-1,101	-912	-719	-528	-335	-144	50
7.00	-701	-462	-219	22	265	506	750
7.50	-301	-12	281	572	865	1,156	1,450
8.00	99	438	781	1,122	1,465	1,806	2,150
8.50	499	888	1,281	1,672	2,065	2,456	2,850
9.00	899	1,338	1,781	2,222	2,665	3,106	3,550

UC COOPERATIVE EXTENSION
Table 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS
 SAN JOAQUIN VALLEY - 2005

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insur- ance	Taxes	
05	180HP 4WD Tractor	110,000	20	14,114	9,215	429	621	10,265
05	35HP 2WD Tractor	15,265	20	1,959	1,279	59	86	1,424
04	75HP 2WD Tractor	28,891	20	3,707	2,420	112	163	2,696
04	Bed Shaper 3 Row 15'	10,000	10	1,768	1,225	41	59	1,325
04	Boom Sprayer 300 gal	4,500	10	796	551	18	26	596
04	Cultipacker Roller 20'	4,000	20	208	343	15	21	379
04	Disk Offset 15'	21,000	20	1,095	1,803	76	110	1,989
04	Forklift Field	21,000	10	2,695	1,759	82	118	1,959
05	Lister - 3 Row	3,336	12	462	371	13	19	403
05	Mower-Rotary 10'	9,500	15	912	940	36	52	1,028
05	Packing Unit Field 12 Row	150,000	10	44,308	17,030	670	972	18,672
05	Pickup 1/2 Ton	28,000	5	12,549	4,423	140	203	4,766
05	Punch Machine 5'	5,000	20	261	429	18	26	474
05	Ripper 15'	11,000	20	573	944	40	58	1,042
05	Truck with 20' bed	51,000	5	15,065	5,790	228	330	6,348
TOTAL		472,492		100,472	48,523	1,978	2,865	53,365
60% of New Cost *		283,495		60,283	29,114	1,187	1,719	32,019

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead			Total
					Insur- ance	Taxes	Repairs	
Irrigation Laterals (Lay Flat Pipe) 2178 ft	533	3		199	2	3	11	215
Miscellaneous Field/Shop Tools	6,000	5		1,425	21	30	120	1,595
TOTAL INVESTMENT	6,533		0	1,624	23	33	131	1,810

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Land Rent	60	acre	300.00	18,000
Liability Insurance	60	acre	8.82	529
Office Expense	60	acre	30.00	1,800

UC COOPERATIVE EXTENSION
Table 6. HOURLY EQUIPMENT COSTS
 SAN JOAQUIN VALLEY 2005

Yr Description	Actual	Cash Overhead				Operating		Total Costs/Hr.
	Hours Used	Capital Recovery	Insur- ance	Taxes	Repairs	Fuel & Lube	Total Oper.	
05 180HP 4WD Tractor	800	6.91	0.32	0.47	2.57	18.14	20.71	28.41
05 35HP 2WD Tractor	601	1.28	0.06	0.09	0.62	2.98	3.60	5.03
05 75HP 2WD Tractor	600	2.42	0.11	0.16	1.18	6.40	7.58	10.27
05 Bed Shaper 3 Row 15'	200	3.68	0.12	0.18	1.13	0.00	1.13	5.11
05 Boom Sprayer 300 gal	150	2.21	0.07	0.11	1.2	0.00	1.20	3.59
05 Cultipacker Roller 20'	100	2.07	0.09	0.13	0.44	0.00	0.44	2.73
05 Disk Offset 15'	100	10.87	0.46	0.67	3.13	0.00	3.13	15.13
05 Forklift Field	1,200	0.88	0.04	0.07	0.86	5.71	6.57	7.56
05 Lister - 3 Row	166	1.34	0.05	0.07	0.68	0.00	0.68	2.14
05 Mower-Rotary 10'	133	4.22	0.16	0.24	4.28	0.00	4.28	8.90
05 Packing Unit Field 12 Row	1,600	6.39	0.25	0.36	3.94	11.09	15.03	22.03
05 Pickup 1/2 Ton	285	9.31	0.29	0.43	2.08	9.82	11.90	21.93
05 Punch Machine 5'	101	2.56	0.11	0.16	0.55	0.00	0.55	3.38
05 Ripper 15'	101	5.64	0.24	0.35	2.36	0.00	2.36	8.59
05 Truck with 20' bed	1,000	3.47	0.14	0.22	4.88	3.26	8.14	11.97

UC COOPERATIVE EXTENSION
Table 7. OPERATIONS WITH EQUIPMENT
 SAN JOAQUIN VALLEY 2005

Operation	Operation Month	Tractor	Implement	Non-Machine Labor Hours	Material	Broadcast Rate/acre	Unit
Cultural:							
Land Prep: Rip	Feb	180HP 4WD	Ripper				
Land Prep: Disc 2X	Feb	180HP 4WD	Disc				
Land Prep: Roll	Feb	75HP 2WD	Cultipacker/Roller				
Land Prep: List Beds	Feb	75HP 2WD	Lister				
Land Prep: Bedshape/Install Dripline	Feb	75HP 2WD	Bedshaper	12.00	Drip Tape	7,920.00	ft
					Black Plastic	8,000.00	ft
Irrigation: Connect drip to lateral lines	Feb			3.00			
Fumigate: through drip	Feb			0.30	Vapam	45.00	gal
					Water	3.00	acin
Plant: Make planting holes	Mar	35HP 2WD	Punch Machine				
Plant: Transplant	Mar			50.00	Transplants	4,915.00	each
Irrigation:	Mar			0.80	Water	3.30	acin
	Apr			1.20	Water	6.70	acin
	May			1.40	Water	7.50	acin
	June			1.40	Water	7.50	acin
	July			0.90	Water	5.00	acin
Fertilize: N through dripline	Apr				UN32	105.60	lb N
	May				UN32	105.60	lb N
	June				UN32	105.60	lb N
Pollinate: Bee Hives (2)	April	Custom			Hives	2.00	each
Insect: Aphid, Whiteflies (Admire)	April	Dripline		0.10	Admire	20.00	floz
Insect: Aphid (Capture)	June	75HP 2WD	Boom Sprayer		Capture	4.50	floz
Field Cleanup	July	75HP 2WD	Mower-Rotary				
	July	Truck		4.00	Discard Plastic	125.00	lb
Harvest:	May	Pack Unit		80.00	Boxes	343.00	each
	June	Pack Unit		160.00	Boxes	643.00	each
	July	Pack Unit		48.00	Boxes	214.00	each
Harvest: Load on Truck	May	Forklift					
	June	Forklift					
	July	Forklift					
Harvest: Haul	May	Truck					
	June	Truck					
	July	Truck					